Electronic TUBES

6C4

TRIODE

DESCRIPTION AND RATING

The 6C4 is a miniature, medium-mu triode suitable for use in a wide variety of general-purpose applications. It is especially useful as a local oscillator in high-frequency and very-high-frequency receiver circuits.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential
Heater Voltage, AC or DC . . . . . 6.3 Volts
Heater Current . . . . . 0.15 Amperes

Direct Interelectrode Capacitances

	With Shield*	Without Shield	
Grid to Plate: (g to p)	1.4	1.6	μμf
Input: g to (h+k)	1.8	1.8	μμf
Output: p to (h+k)	2.5	1.3	μμf

MECHANICAL

Mounting Position—Any
Envelope—T-5½, Glass
Base—E7-1, Miniature Button 7-Pin

MAXIMUM RATINGS

DESIGN-CENTER VALUES	Class A_1 Amplifier	Class C Telegraphy	
Plate Voltage	300	300	Volts
Negative DC Grid Voltage	—	50	Volts
Plate Dissipation	3.5	5.0	Watts
DC Plate Current	—	25	Milliamperes
DC Grid Current	—	8.0	Milliamperes
Heater-Cathode Voltage			
Heater Positive with Respect to Cathode			
DC Component	100	100	Volts
Total DC and Peak	200	200	Volts
Heater Negative with Respect to Cathode			
Total DC and Peak	200	200	Volts
Grid-Circuit Resistance			
With Fixed Bias	0.25	0.25	Megohms
With Cathode Bias	1.0	1.0	Megohms

Design-Center ratings are limiting values of operating and environmental conditions applicable to a bogey tube of a specified type as defined by its published data, and should not be exceeded under normal conditions.

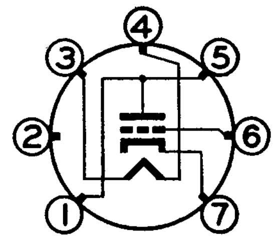
These values are chosen by the tube manufacturer to provide acceptable serviceability of the tube in average applications, taking responsibility for normal changes in operating conditions due to rated supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all tubes.

The equipment manufacturer should design so that initially no design-center value for the intended service is exceeded with a bogey tube in equipment operating at the stated normal supply voltage.

GENERAL ELECTRIC

Supersedes ET-T283D dated 6-53

BASING DIAGRAM

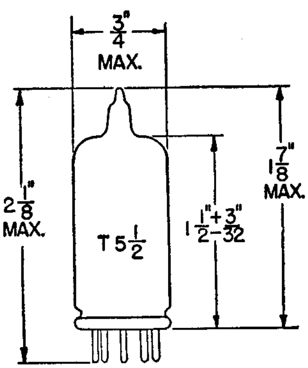


EIA 6BG

TERMINAL CONNECTIONS

Pin 1—Plate
Pin 2—Internal Connection
Pin 3—Heater
Pin 4—Heater
Pin 5—Plate
Pin 6—Grid
Pin 7—Cathode

PHYSICAL DIMENSIONS



EIA 5-2

CHARACTERISTICS AND TYPICAL OPERATION

CLASS A₁ AMPLIFIER

Plate Voltage	100	250	Volts
Grid Voltage	0	−8.5	Volts
Amplification Factor	19.5	17	
Plate Resistance, approximate	6250	7700	Ohms
Transconductance	3100	2200	Micromhos
Plate Current	11.8	10.5	Milliamperes
Grid Voltage, approximate Ib = 10 Microamperes	−10	−25	Volts

CLASS C TELEGRAPHY, RF POWER AMPLIFIER AND OSCILLATOR

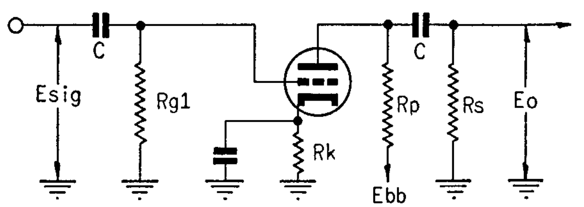
DC Plate Voltage	300	Volts
DC Grid Voltage	−27	Volts
DC Plate Current	25	Milliamperes
DC Grid Current, approximate	7	Milliamperes
Grid Driving Power, approximate	0.35	Watts
Power Output, approximate†	5.5	Watts

* With external shield (EIA 316) connected to pin 7.

† At 150 megacycles a power output of 2.5 watts may be obtained when the 6C4 is used as an oscillator with a grid resistor of 10,000 ohms and maximum rated input.

CLASS A RESISTANCE-COUPLED AMPLIFIER

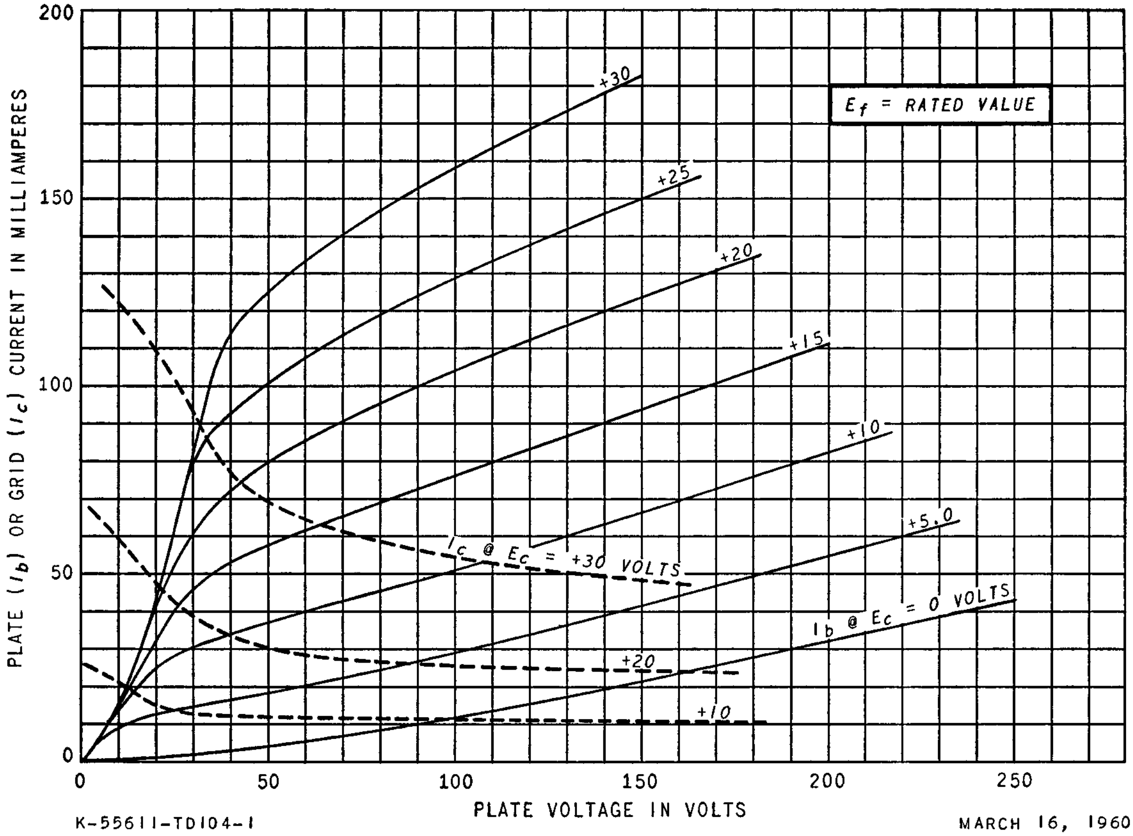
Rp Meg.	Rs Meg.	Rg1 Meg.	Ebb = 90 Volts Rk	Gain	Eo	Ebb = 180 Volts Rk	Gain	Eo	Ebb = 300 Volts Rk	Gain	Eo
0.10	0.10	0.10	3900	10	10	3600	11	20	3500	11	30
0.10	0.24	0.10	5000	11	14	4700	12	27	4400	12	41
0.24	0.24	0.10	9400	11	13	8700	11	25	8700	12	38
0.24	0.51	0.10	11000	11	17	11000	12	32	11000	12	48
0.51	0.51	0.10	19000	11	15	18000	12	29	18000	12	43
0.51	1.0	0.10	24000	11	19	23000	12	37	23000	12	54
0.24	0.24	10	0	14	12	0	16	20	0	17	28
0.24	0.51	10	0	14	16	0	16	28	0	17	40
0.51	0.51	10	0	14	15	0	15	26	0	16	38
0.51	1.0	10	0	14	19	0	16	35	0	16	52



Note: Coupling capacitors (C) should be selected to give desired frequency response. Rk should be adequately by-passed.

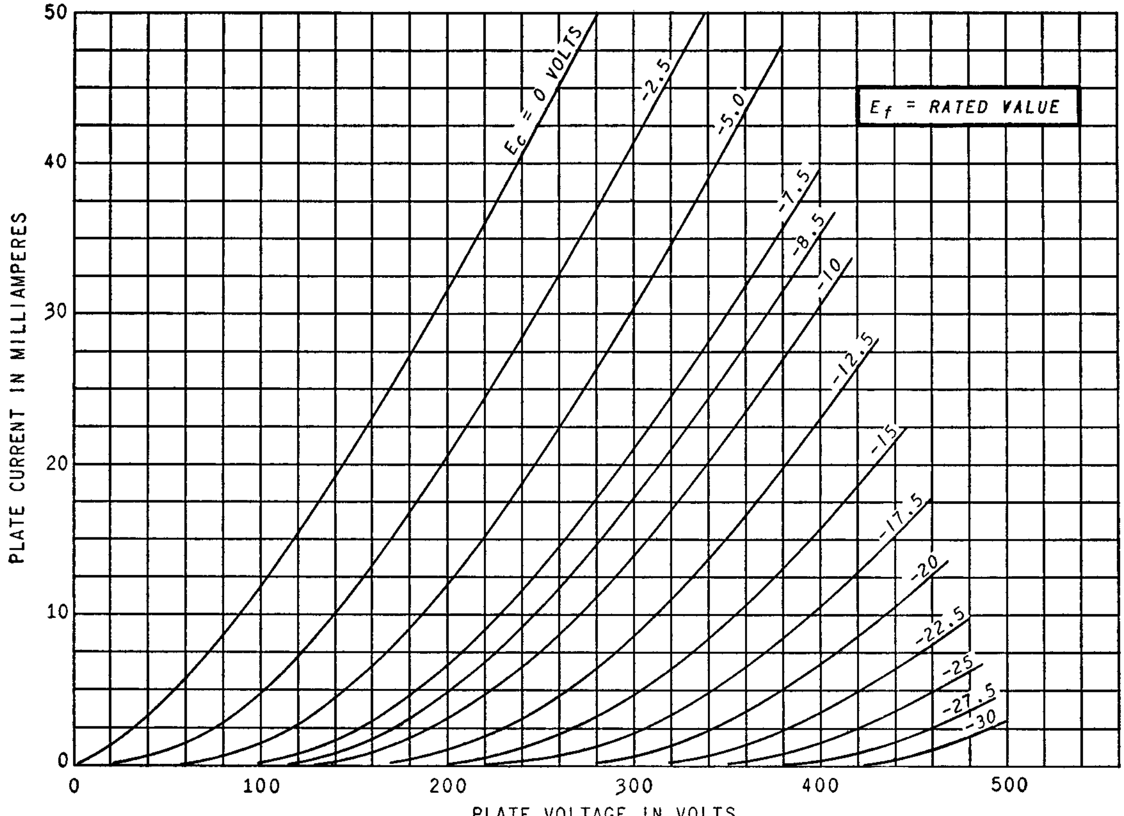
Notes: 1. Eo is maximum RMS voltage output for five percent (5%) total harmonic distortion. 2. Gain measured at 2.0 volts RMS output. 3. For zero-bias data, generator impedance is negligible.

AVERAGE PLATE CHARACTERISTICS



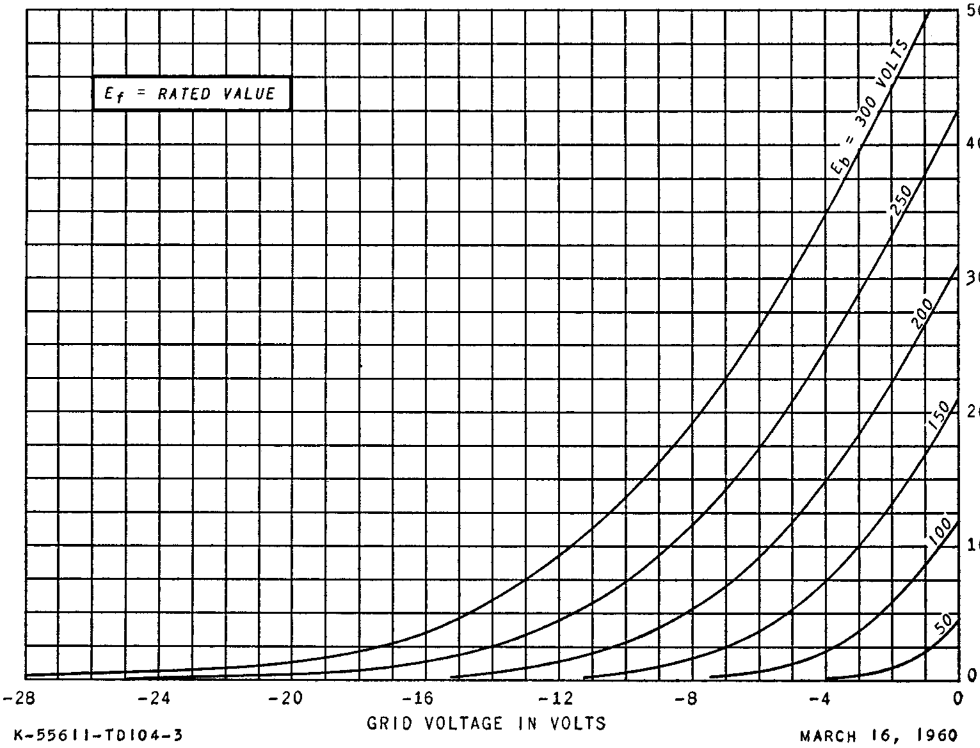
K-55611-TD104-1 MARCH 16, 1960

AVERAGE PLATE CHARACTERISTICS

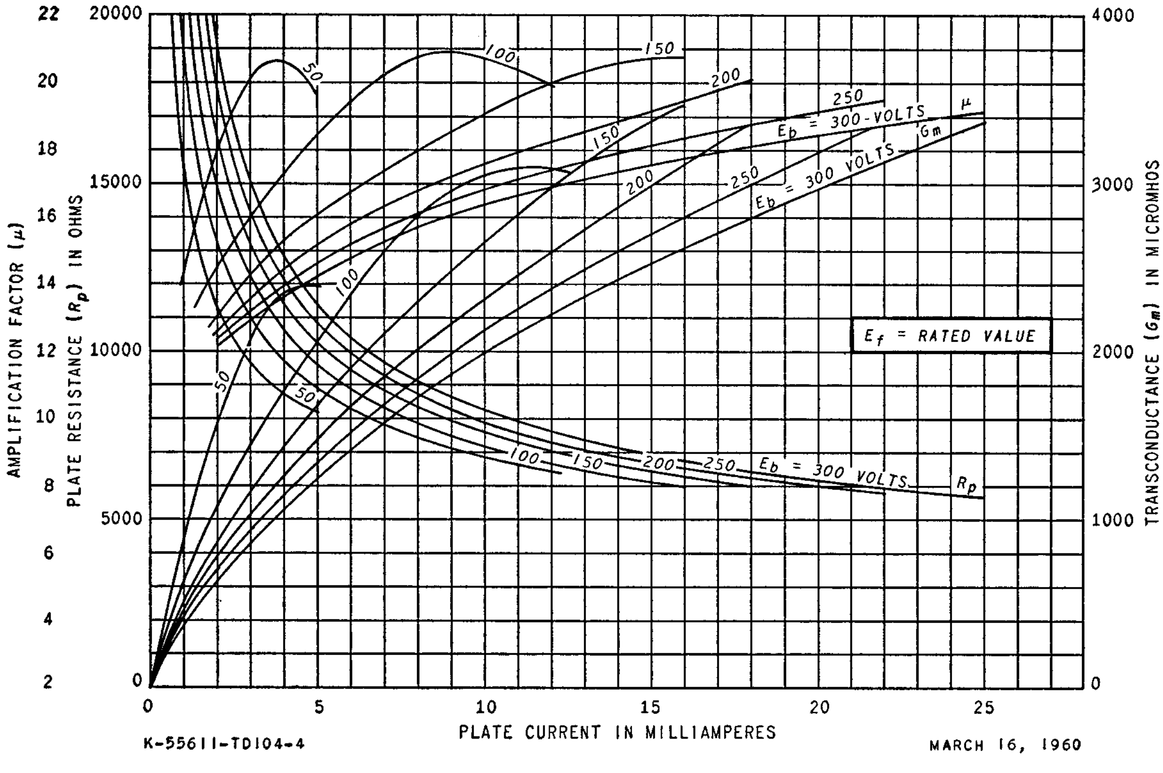


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AVERAGE TRANSFER CHARACTERISTICS



AVERAGE CHARACTERISTICS



ELECTRONIC COMPONENTS DIVISION

GENERAL ELECTRIC

Schenectady 5, N. Y.